What is claimed is:

1. An electric power steering system for driving a motor connected to a steering system based on a steering force detection value obtained by detecting the steering force of a driver to assist the steering force of the steering system, the system comprising means of computing an estimated value of static friction of the steering system and means of compensating for the static friction based on this estimated value of static friction.

2. The electric power steering system of claim 1, wherein the static friction of the steering system is estimated by extracting the edge of the steering force detection value.

3. The electric power steering system of claim 1, wherein the static friction of the steering system is estimated by extracting the edge of motor angular velocity, motor back electromotive force or steering angular velocity.

4. The electric power steering system of claim 1, wherein the static friction of the steering system is estimated by extracting the edge of a motor current.

5. The electric power steering system of claim 1, wherein the static friction of the steering system is estimated by extracting an edge of the steering force detection value, the motor angular velocity, the motor back electromotive force, the steering angular velocity or the motor current, wherein the extraction of the edge is carried out through a high frequency pass filter.

6. The electric power steering system of claim 5, wherein the time constant of the high-frequency pass filter is made almost equal to the mechanical time constant or acceleration constant of the motor.

7. The electric power steering system of claim 1, wherein the static friction of the steering system is estimated by extracting an edge of the steering force detection value, the motor angular velocity, the motor back electromotive force, the steering angular velocity or the motor current, and the static friction of the steering system is estimated by multiplying an extracted value of the edge by a predetermined function of motor angular velocity, motor back electromotive force or steering angular velocity.

8. The electric power steering system of claim 2, wherein an upper limit is provided for the static friction estimated value.

9. The electric power steering system of claim 1, wherein static friction compensation having a term proportional to the static friction estimated value obtained by the positive feedback of the static friction estimated value is computed and the static friction of the steering system is compensated by the static friction compensation.

10. The electric power steering system of claim 9, wherein the gain of the positive feedback is set such that the static friction estimated value and the motor output torque become almost equal to each other.

11. The electric power steering system of claim 1, wherein static friction compensation obtained through the means of compensating for the static friction is obtained from both a term proportional to the static friction estimated ~~vale~~ value and a term for compensating for the nonlinear~~ly~~ity of the motor or a motor reduction gear.

12. The electric power steering system of claim 11, wherein the term for compensating for the nonlinear~~ly~~ity of the motor or the motor reduction gear is used when the static friction

estimated value is larger than a predetermined value.

13. The electric power steering system of claim 1, wherein the static friction is compensated by multiplying the term proportional to the static friction estimated value obtained through the means of computing the estimated value of the static friction by a predetermined function for compensating for the nonlinearity of the motor or the motor reduction gear.

14. The electric power steering system of claim 9, wherein an upper limit is provided for at least one or all of the static friction compensation performed through the means of compensating for the static friction, the term proportional to the static friction estimated value obtained through the means of computing the estimated value of the static friction and the term for compensating for the nonlinearity of the motor or the motor reduction gear.

15. The electric power steering system of claim 1, wherein the static friction is compensated by multiplying at least one or all of the static friction compensation performed through means of compensating for the static friction, the term proportional to the static friction estimated value obtained through the means of computing the estimated value of the static friction and the term for compensating for the nonlinearly of the motor or the motor reduction gear a predetermined function of motor angular velocity, motor back electromotive force and steering angular velocity.

16. The electric power steering system of claim 1, wherein at least one or all of the static friction estimated value obtained through the means of computing an estimated value of the static friction, the static friction compensation performed through means of compensating for the static friction, the term proportional to the static friction estimated value obtained through the means of computing the estimated value of the static

friction and the term for compensating for the nonlinearity of the motor or the motor reduction gear are changed based on car speed or engine speed.

17. The electric power steering system of claim 16, wherein at least one or all of the function of motor angular velocity, motor back electromotive force or steering angular velocity, the positive feedback gain, the term for compensating for the nonlinearity of the motor or the motor reduction gear, the predetermined function for compensating for the nonlinearty of the motor or the motor reduction gear and the upper limit are changed based on car speed or engine speed.

18. The electric power steering system of claim 1, wherein the dynamic friction or inertia of the steering system is compensated based on the angular velocity or angular acceleration of the motor or steering.

19. The electric power steering system of claim 18, wherein a term for compensating for dynamic friction and a term for compensating for static friction are weighed so that one of them is used.

20. The electric power steering system of claim 18, wherein the term for compensating for dynamic friction, the term proportional to the static friction estimated value and the term for compensating for the nonlinearity of the motor or the motor reduction gear are weighed so that at least one of them is used.